

HOLLIE TANNER

CASE STUDY: **NEW PRODUCT 0→1 LAUNCH** - *Plex Industrial IoT Platform*

THE CHALLENGE

Plex Systems, known for its cloud-based ERP solutions for manufacturing, acquired an industrial IoT asset-tracking product with the goal of rebuilding it in-house. The vision was to transform this acquired IP into a brand-new, modern platform that integrated with Plex's ERP yet operated independently to support connected factory environments.

Industrial manufacturers faced significant challenges in managing real-time data from diverse machines and systems. Pain points included fragmented visibility into equipment health, downtime tracking, performance monitoring, and the sheer complexity of handling data at vastly different scales. The market demanded tools that could simplify this data, provide actionable insights, and support varied operational priorities across industries, facility sizes, and equipment types.

THE APPROACH

Problem Framing

Designing an Industrial IoT solution required balancing multiple layers of complexity. The system had to scale from monitoring a single asset to supporting entire facilities with thousands of devices, each producing high-volume data streams. Data complexity amplified the challenge: identifiers like OPC tags were often managed by third-party systems with little consistency, making mapping and visualization unreliable. Customers also required high levels of customizability, since different industries prioritized different metrics, dashboards, and analytics. Finally, even within the same manufacturing roles, workflows varied significantly across companies, demanding flexible and adaptable design solutions.

Research and Discovery

To address these risks, we invested heavily in discovery. Onsite interviews and production-floor observations allowed me to build subject-matter expertise in how operations function at a detailed level, understanding how chemicals are stored, how food is frozen in large freezer systems, and which components inside machinery present the greatest maintenance challenges. I studied how these systems were monitored with sensors and what “real” data looks like in context, rather than relying on placeholder values. Incorporating authentic data representations into prototypes made them more immersive, helping stakeholders empathize with personas and workflows while grounding design conversations in realistic scenarios.

We combined this with structured focus groups and concept reviews to validate product directions before engineering investment, supplemented by competitive analysis to benchmark functionality. Iterative design cycles and milestone feedback gave us opportunities to course-correct quickly. A pivotal moment came when a concept initially believed to be critical revealed major usability and adoption risks during testing. Because this surfaced early, we avoided costly engineering investment, pivoted rapidly, and reinforced customer trust in the process.

Design Execution

With clear insights, the design process moved from strategy into detailed execution. Personas and journey maps were created to reflect the diversity of operational contexts. Low-fidelity wireframes allowed quick exploration of workflows, while high-fidelity dashboards and prototypes emphasized layered visualizations where users could either monitor at a high level or drill into details as needed.

I designed components that created resonance between the data and the physical environments being monitored. Related data was structured in ways that reflected how assets existed in real space, strengthening the connection between workflows and system feedback. Interaction patterns gently nudged users through ordered steps for optimal workflows, but always allowed them to pause, depart, and rejoin guided paths as needed. This balance of structured guidance with flexible autonomy reflected real manufacturing demands where priorities shift constantly.

I also led the evolution of Plex's design system to support these experiences, extending it from a light theme to a dark theme and later a complete rebrand. These changes modernized tones, aligned with corporate guidelines, and ensured that visual consistency supported both the density of data displays and the flexibility of customer-specific adaptations.

As Principal Product Designer, I led the end-to-end UX, UI, and research efforts for the Industrial IoT product. My responsibilities included:

- ✓ **Product Vision:** Defined the product vision and translated early-stage IP into a scalable, user-focused solution.
- ✓ **Contextual Research:** Conducted onsite interviews and observations at manufacturing facilities to capture real-world workflows and user needs.
- ✓ **Workflow Design:** Developed user flows, wireframes, and hi-fi designs for complex workflows and data visuals.
- ✓ **Usability Testing:** Led testing cycles and iterative design processes with milestone customer feedback sessions.
- ✓ **Customer Presentation:** Introduced the product at the annual customer conference, presenting in both large sessions and smaller breakout discussions
- ✓ **Cross-Regional Collaboration:** Partnered with a Lead Product Manager in Bengaluru and coordinated with development teams distributed between in-house staff and a team in Belarus.
- ✓ **Design System Expansion.** Extended Plex's UI from light to dark mode and led a rebranding effort to align with updated corporate palettes.

THE IMPACT

The Industrial IoT solution matured into a platform that could flex between simple asset monitoring and large-scale facility operations without losing usability. By grounding prototypes in real-world production data and workflows, we ensured that designs reflected authentic user needs rather than abstract placeholders. This made stakeholder reviews more meaningful and created stronger empathy across the product team.

Customer trust increased as early discovery efforts prevented costly missteps and demonstrated that their feedback shaped the product. The design system updates established a consistent, modern foundation that supported both dark and light themes, reinforcing accessibility and usability across data-dense dashboards.

Operationally, the balance between guided workflows and flexible autonomy reduced user error, supported faster onboarding, and gave teams confidence that they could complete tasks in a way that matched both their industry and their facility-specific demands. The structuring of data to mirror the physical environment improved how users navigated and interpreted information, aligning the product with the realities of complex manufacturing systems. Less than one year after this launch, Plex Systems was acquired by Rockwell Automation, with the Industrial IoT solution positioned as a core differentiator in the company's growth strategy.

Key Takeaways

- ✦ Embedding real data and authentic workflows into prototypes builds empathy and clarity during the design process, reduces risk, and increases adoption.
- ✦ Subject-matter expertise is critical; observing production environments at a granular level created insights that no abstract personas or placeholder data could capture.
- ✦ Balancing guided flows with flexible autonomy supports both efficiency and adaptability in high-variability industries.
- ✦ Structuring digital systems to reflect physical environments improves navigation, comprehension, and user confidence driving onboarding and user self-discovery goals.
- ✦ A robust design system ensures that scalable, accessible, and modern interfaces can evolve alongside both customer needs and corporate brand shifts.